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# **WETLAND DELINEATION REPORT**

## **SHAFFER EQUIPMENT - MINDEN**

## **FAYETTE COUNTY, WEST VIRGINIA**

*Prepared for*

**WESTON SOLUTIONS, INC.**  
**1400 Weston Way**  
**West Chester, PA 19380**

(b) (4)

**Project No. C18-214-2276, Task 3**  
**June 13, 2018**

(b) (4)

## 1.0 PURPOSE

(b) (4), on behalf of our client, Weston Solutions, Inc. (Weston), has prepared this Wetland Delineation Report to document existing wetland resources within the area defined by Weston associated with the Shafer Equipment site boundary and the surrounding areas of Arbuckle Creek (Project AOI). The purpose of this report is to identify potential “Waters of the United States (WoUS),” (wetland resources only) which will assist Weston Solutions with planning and permitting requirements. (b) (4) and Weston Solutions acknowledge that jurisdictional determinations are solely made by the United States Army Corps of Engineers (USACE) and have prepared this report accordingly. The wetlands have also been evaluated for eligibility as wetlands using the United States Environmental Protection Agency’s Hazard Ranking System (HRS).

## 2.0 INTRODUCTION

Weston, a contractor for the United States Environmental Protection Agency (EPA), is providing services associated with polychlorinated biphenyls (PCB) contamination at the Shafer Equipment Site (Shafer). Shafer built electrical mining equipment and provided equipment maintenance; oil used in equipment was contaminated with PCBs and disposed of at an abandoned mine site. Weston is utilizing the EPA’s HRS, which will assess the relative potential of a site to pose human health or environmental threats. As part of the analysis, a wetland delineation is required.

The Project AOI is located adjacent to Minden in Fayette County, West Virginia (*Appendix A, Drawing No. C18-214-A1*). The site is located within the Thurmond (West Virginia) USGS quadrangle. Photos representative of on-site conditions are provided in *Appendix B*. (b) (4) completed wetland delineations on May 15-16, 2018. Seven (7) wetlands were identified within the Project AOI.

## 3.0 METHODS

### 3.1 Preliminary Desktop Review

Secondary source information, including: United States Geological Survey (USGS) topographic mapping (1976), Natural Resources Conservation Service (NRCS) soil survey mapping (2018), West Virginia Statewide Addressing and Mapping (SAMB, 2003), United States Fish and Wildlife NWI mapping (2013), United States Geological Survey (USGS) National Hydrography Data (NHD), and aerial mapping were evaluated prior to the field investigation to determine probable aquatic resource locations (*Appendix A, Drawing No. C18-214-A3*).

### 3.2 Stream and Wetland Delineation

(b) (4) staff performed a walkover of the Project AOI and identified existing wetland resources. Field data points were collected utilizing a Trimble Geo7x submeter handheld global positioning system (GPS) unit. Wetland data test points and wetland boundary data were collected. Photos and data notes documenting site conditions were taken/recorded. Wetlands were classified using the Cowardin Classification System (1979). Soils were collected with a soil



auger and identified by referencing the Munsell Soil Color Charts (2012). Vegetation indicator status was obtained from the most current national wetland plant list (Lichvar et. al., 2016). Field data are then mapped using ArcMap 10.3.1.

Wetlands were identified/delineated utilizing methodology outlined by the *USACE Wetlands Delineation Manual* (1987) and the *USACE Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (Version 2.0)* (2012). The technical definition of a jurisdictional wetland, per the USACE and United States Environmental Protection Agency (USEPA) is: “Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (40 CFR 230.3). The HRS also utilizes this definition of a wetland. Standardized indicators for hydrology, soils, and vegetation were evaluated to determine if areas within the LOD met the technical criteria for classification as a wetland. Data points were collected in areas which exhibited hydrology and/or hydrophytic vegetation indicators to determine if soils were hydric, and possibly wetlands, and also in areas delineated outside established wetland boundaries (uplands).

## **4.0 RESULTS**

### **4.1 Physical Characteristics and Land Use**

The Project AOI is situated east of Oak Hill, West Virginia near the town of Minden (*Appendix B, Photo Pages*). The areas adjacent to Arbuckle Creek are mainly residential, with easy access via existing roads, with some areas having forested cover.

### **4.2 Drainage and Topography**

The Project AOI is located within the Manns Creek – New River watershed (HUC 12: 0505000040303) which is within the Lower New watershed (HUC 050500004). The Project AOI is located inside the FEMA 100-year floodplain (Flood Zone A) (*Appendix A, Drawing No. C18-214-A3*).

### **4.3 Soils**

The soils within the AOI consist of four (4) mapped soil types (*Appendix A, Drawing No. C18-214-A2; Appendix C, Table 1; Appendix D, Soil Report*).

### **4.4 Weather Conditions**

Records indicated that the surrounding area received the following amount of precipitation (Weather Underground, 2018):

- May 12-14, 2018 (72 hours prior to site visit): 0.00 inch; and
- May 15-16, 2018 (site visit): 0.35 inch.



Weather conditions during the site visit were variable, with highs in the mid-80s (°F) and lows in the high 60s (°F).

#### 4.5 Stream and Wetland Resources

Field investigations were completed May 15-16, 2018 by [REDACTED] staff. [REDACTED] identified seven (7) wetlands within the Project AOI (*Appendix A, Drawing No. C18-214-B1*). Wetland characteristic data are provided in *Appendix E, Wetland Data Forms*. *Wetlands identified were dominated by hydrophytic vegetation and had hydric soils. The wetlands meet the criteria for HRS eligibility per the 40 CFR 230.3 definition. The wetlands are considered palustrine emergent (PEM) wetlands.*

Wetland lengths, as measured from the upstream boundary point adjacent to Arbuckle Creek to the downstream boundary point adjacent to Arbuckle Creek, are included in *Appendix A, Drawing No. C18-214-B1*. A total of 2,287 linear feet of wetlands were identified adjacent to Arbuckle Creek. *Please note that Wetland 7 and Wetland 11, as illustrated in the photos (Appendix B) were located outside the Project AOI.*

*PLEASE NOTE THAT NOT ALL PROPERTIES ADJACENT TO ARBUCKLE CREEK WITHIN THE PROJECT AOI WERE ACCESSIBLE DURING THE SITE VISIT (NO LANDOWNER PERMISSION). These areas were viewed from the nearest public access point, but detailed surveys were not able to be completed.*

#### 5.0 DISCUSSION

Wetland resources are located adjacent to Arbuckle Creek. County, state, and federal permits may be required, if construction is proposed for the area and if stream and/or wetland impacts are proposed. Permits that may be required include: USACE nationwide or individual 404 permit, WVDEP 401 permit, West Virginia Division of Natural Resources (WVDNR) Office of Land and Streams (OLS) stream activity permit, county floodplain permit, and Section 7/Section 106 agency consultations.

##### 5.1 Potential Federal and/or State Jurisdiction

Seven (7) wetland resources were identified adjacent to Arbuckle Creek and are potentially jurisdictional waters of the United States (WoUS).

Final jurisdictional determinations will need to be made by the USACE, either via a preliminary jurisdictional determination or an approved jurisdictional determination, should activities be proposed that would impact the identified water resources. If the USACE determines water resources to be federally non-jurisdictional, the WVDEP will need contacted so that they may determine if the federally non-jurisdictional resources are “waters of the state.” *The 2015 WoUS Rule was reviewed by the USEPA and USACE per an Executive Order issued in February 2017. Based on that review, the agencies finalized the rule, adding an applicability date to the 2015 rule defining WoUS. The 2015 Rule will not be applicable until February 6, 2020. The 1986/1988 regulatory definition of WoUS, implemented with subsequent decision and guidance*





*documents, is currently in effect until that date.* Impacts to federal and/or state jurisdictional water resources will require the appropriate federal and/or state agency consultations and permits.



## 6.0 CLOSING

Alliance has based the findings of this report on professional training and experience and on current regulatory guidance and requirements. This report has been prepared as due diligence to determine potentially jurisdictional wetland resources in the Project AOI defined by Weston. The scope of this report is limited to the project and location described herein and represents our understanding of the project and existing on-site conditions and features. Changes to the proposed limits of disturbance may require additional field reviews. Alliance should be notified of proposed project changes, to allow for re-examination of site conditions and for modification/revision to the conclusions and recommendations in the report. Weston is reminded that this delineation is preliminary; the delineation is not final until the USACE verifies the jurisdictional determination and Weston receives confirmation from the USACE regarding wetland resource boundaries.

Sincerely,

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(b) (4)

Staff Scientist

(b) (4)

Senior Scientist

BB/PFO:bb/kjs

Enclosures



## 7.0 REFERENCES CITED

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## 8.0 LIST OF PREPARERS

### (b) (4), B.S. – Staff Scientist

(b) (4) is a Staff Scientist with (b) (4). He attended Frostburg State University where he graduated with a Wildlife and Fisheries degree in 2016. He has received extensive training in the use of the 1987 Army Corps of Engineers Wetland Delineation Manual from the Swamp School, 2015, as well as in the field training with (b) (4) staff. He has experience with the Eastern Mountain and Piedmont Regional Supplement, as well as the Midwest Regional Supplement.

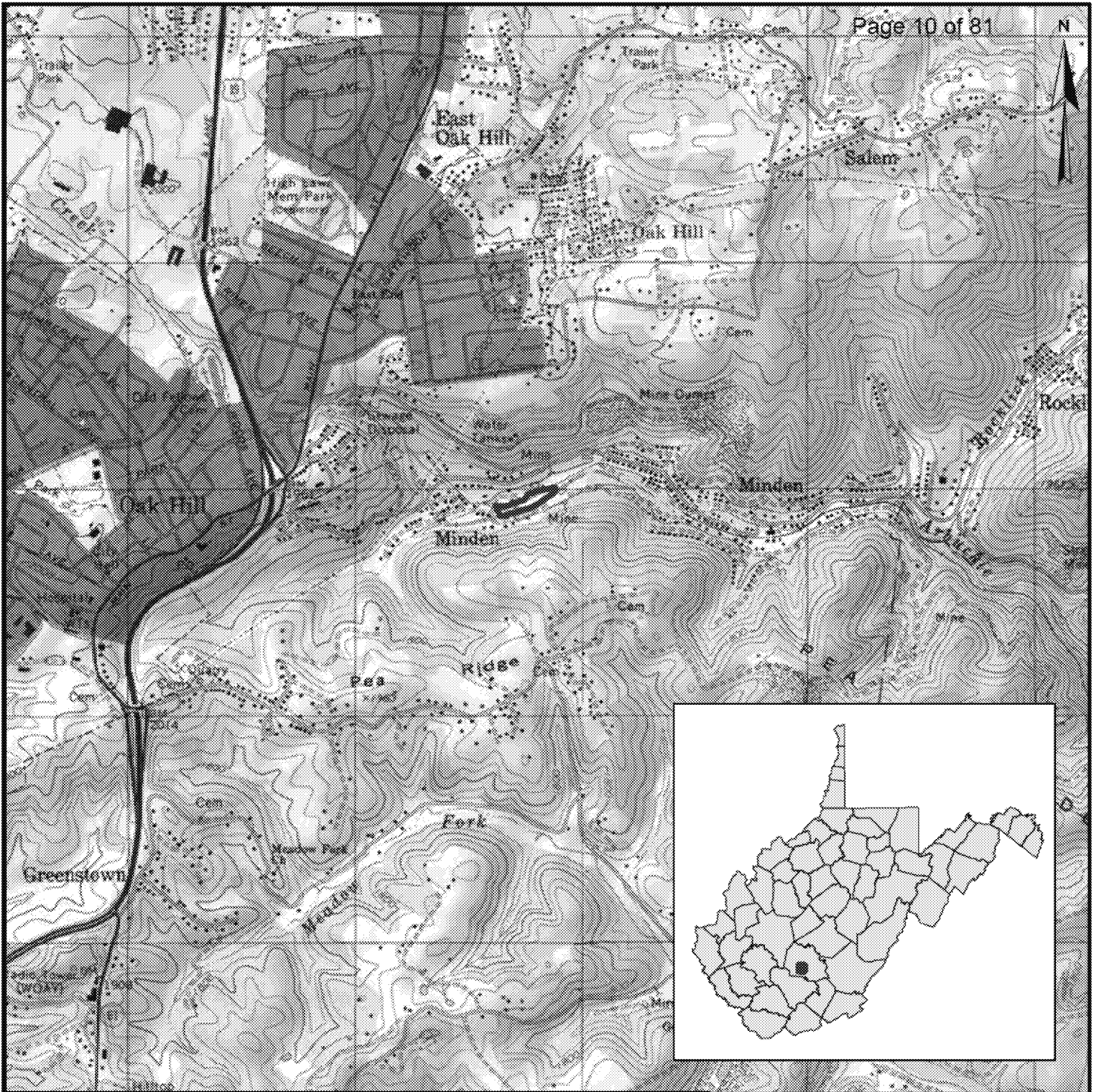
### (b) (4), M.S. – Senior Scientist/Office Manager

(b) (4) is a Senior Scientist with (b) (4). She attended Marshall University, where she received both her B.S. and M.S. degrees in the Biological Sciences. (b) (4) has over 16 years' experience as an environmental consultant, and 6+ years of stream and wetland delineation experience. She has been Swamp School (2012) trained in the use of the 1987 Army Corps of Engineers Wetland Delineation Manual and the Eastern Mountains and Piedmont Regional Supplement (Version 2).



**APPENDIX A**  
**DRAWINGS/MAPPING**





#### REFERENCES

Topographic quad was retrieved from ESRI Online Services on 5/24/2018.

0 1,000 2,000 4,000 Feet  
1 inch = 2,000 feet

#### Legend

- Site Boundary
- Delineated Wetlands

### PROJECT LOCATION MAP

#### SHAHER EQUIPMENT (MINDEN) WETLAND DELINEATION

PREPARED FOR  
WESTON SOLUTIONS, INC.  
WEST CHESTER, PA

DRAWN BY (b) (4) 5/25/2018

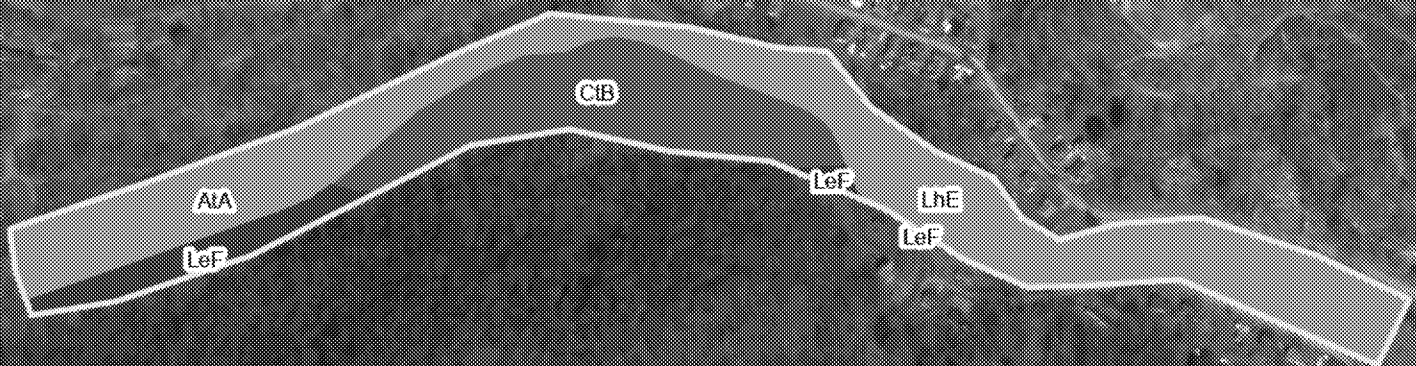
CHECKED BY (b) (4) 5/25/2018

APPROVED BY (b) (4) 5/25/2018

DRAWING NUMBER

C18-214-A1

(b) (4)  
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## REFERENCES

AERIAL IMAGERY RETRIEVED FROM ESRI ONLINE SERVICES ON 5/25/2018

SOILS DATA RETRIEVED FROM NRCS WEB SOIL SURVEY ON 5/25/18

0 250 500 1,000 Feet  
1 inch = 500 feet

C18-214-2276

## Legend

AREA OF INVESTIGATION

## SOIL TYPE

AtA  
CIB  
LeF  
LhE

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## SOILS MAP

### SHAFER EQUIPMENT (MINDEN) WETLAND DELINEATION

PREPARED FOR  
WESTON SOLUTIONS, INC.  
WEST CHESTER, PA

DRAWN BY (b) (4) 5/25/2018

CHECKED BY 5/25/2018

APPROVED BY 5/25/2018

DRAWING NUMBER

C18-214-A2





#### REFERENCES

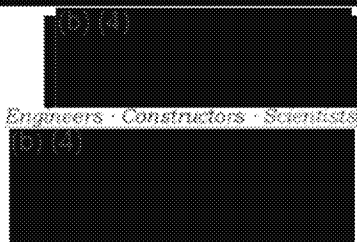
Streams were retrieved from the WV Street Addressing and Mapping Board (WV SAMB).  
 NWI wetlands were retrieved from the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory.  
 100 Year Floodplain data were retrieved from FEMA.  
 Aerial Imagery retrieved from ESRI Online Services on 5/25/2018.

0 500 1,000 2,000 Feet  
 1 inch = 1,000 feet

C18-214-2276

#### Legend

- AREA OF INVESTIGATION
- SAMB STREAMS
- NWI WETLANDS
- 100 YEAR FLOODPLAIN



## AQUATIC RESOURCES MAP

### SHAHER EQUIPMENT (MINDEN) WETLAND DELINEATION

PREPARED FOR  
 WESTON SOLUTIONS, INC.  
 WEST CHESTER, PA

DRAWN BY	(b) (4)	5/25/2018
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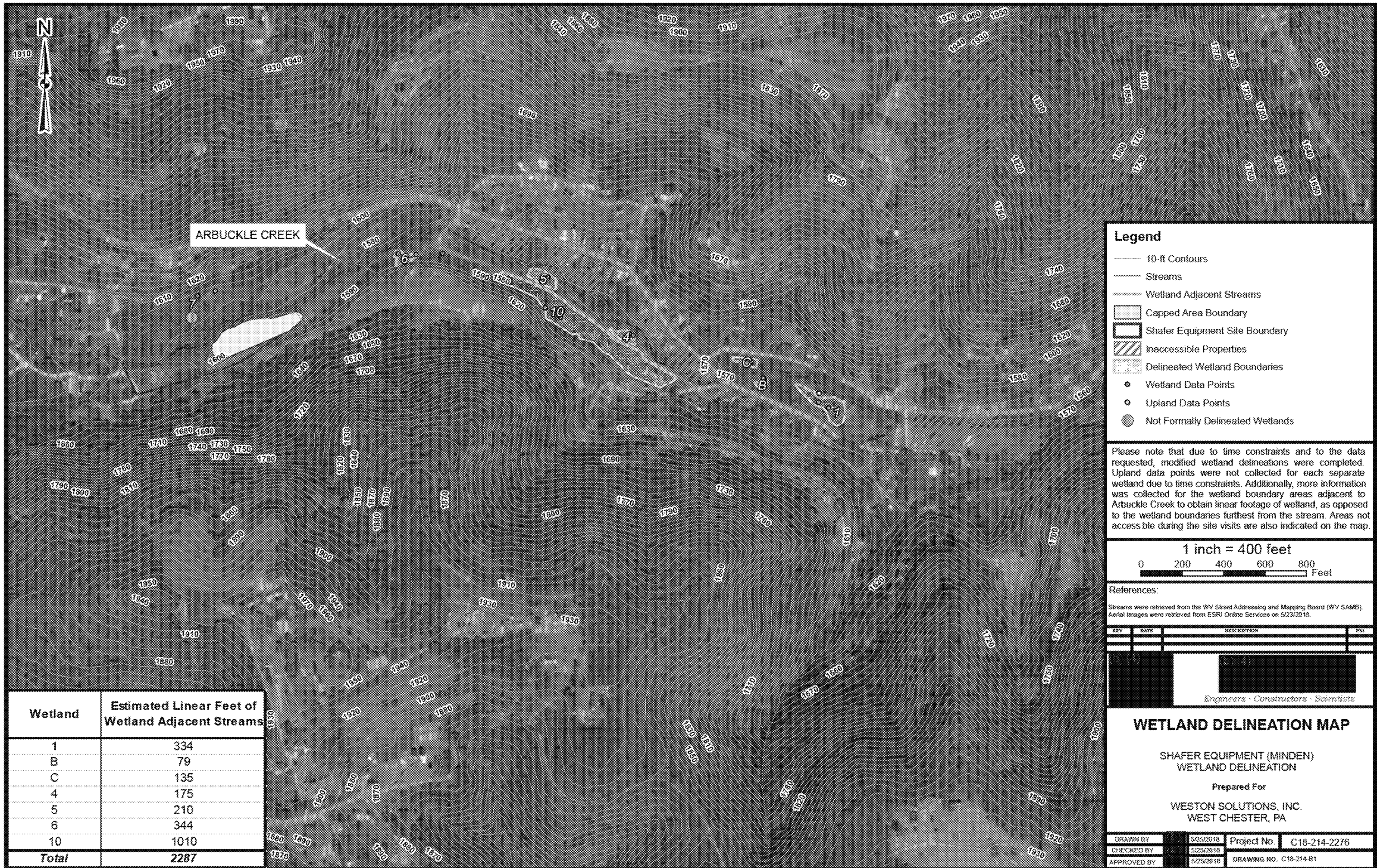
CHECKED BY	(b) (4)	5/25/2018
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APPROVED BY	(b) (4)	5/25/2018
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DRAWING NUMBER
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C18-214-A3
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Wetland	Estimated Linear Feet of Wetland Adjacent Streams
1	334
B	79
C	135
4	175
5	210
6	344
10	1010
Total	2287

**Legend**

- 10-ft Contours
- Streams
- Wetland Adjacent Streams
- Capped Area Boundary
- Shafer Equipment Site Boundary
- Inaccessible Properties
- Delineated Wetland Boundaries
- Wetland Data Points
- Upland Data Points
- Not Formally Delineated Wetlands

Please note that due to time constraints and to the data requested, modified wetland delineations were completed. Upland data points were not collected for each separate wetland due to time constraints. Additionally, more information was collected for the wetland boundary areas adjacent to Arbuttle Creek to obtain linear footage of wetland, as opposed to the wetland boundaries furthest from the stream. Areas not accessible during the site visits are also indicated on the map.

1 inch = 400 feet

0 200 400 600 800 Feet

References:

Streams were retrieved from the WV Street Addressing and Mapping Board (WV SAMB). Aerial images were retrieved from ESRI Online Services on 5/23/2018.

EAS	DATE	DESCRIPTION	PM
(b) (4)		(b) (4)	

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**WETLAND DELINEATION MAP**

SHAHER EQUIPMENT (MINDEN)  
WETLAND DELINEATION

Prepared For

WESTON SOLUTIONS, INC.  
WEST CHESTER, PA

DRAWN BY	(b) (4)	5/25/2018	Project No.	C18-214-2276
CHECKED BY	(b) (4)	5/25/2018		
APPROVED BY	(b) (4)	5/25/2018	DRAWING NO.	C18-214-B1

**APPENDIX B**  
**PHOTO PAGES**





1. Wetland 1 Overview



2. Wetland 1 Overview







3. Wetland 1 Overview



4. Wetland 1 Overview





5. Wetland 1 Overview



6. Wetland 1 Overview





7. Wetland 1 Soils



8. Wetland 1 Soils



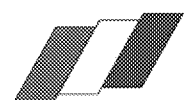




9. Wetland B Overview



10. Wetland B Overview





11. Wetland B Soils



12. Wetland C Overview



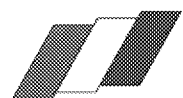




13. Wetland C Overview



14. Wetland C Overview





15. Wetland 4 Overview



16. Wetland 4 Overview





17. Wetland 4 Overview



18. Wetland 4 Overview; Wetland 10 in Background



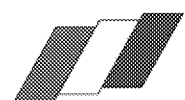




19. Wetland 5 Overview



20. Wetland 5 Overview





21. Wetland 5 Overview



22. Wetland 5 Overview





23. Wetland 6 Overview



24. Wetland 6 Overview







25. Wetland 6 Overview



26. Wetland 6 Overview





27. Wetland 7 (Not Formally Delineated)



28. Wetland 7 (Not Formally Delineated)







29. Wetland 7 (Not Formally Delineated)



30. Wetland 7 (Not Formally Delineated)





31. Wetland 10 Overview



32. Wetland 10 Overview





33. Wetland 10 Overview



34. Wetland 10 Soils





35. Wetland 11 (Not Formally Delineated)



36. Wetland 11 (Not Formally Delineated)



## APPENDIX C

### TABLES





**TABLE 1**  
**Site Soil Descriptions (Soil Survey Staff, 2018)**  
**Shaffer Equipment - Minden Wetland Delineation**  
**Fayette County, West Virginia**

Map Symbol	Soil Name	Landform(s)	Hydrologic Soil Group	Drainage Class	Frequency of Flooding	Frequency of Ponding
AtA	Atkins loam, warm, 0 to 3 percent slopes, frequently flooded	Floodplain	C/D	Poorly drained	Frequent	Occasional
CtB	Cotaco loam, 3 to 8 percent slopes	Stream Terraces	C	Moderately well drained	None	None
LeF	Layland-Dekalb-Guyandotte complex, 35 to 70 percent slopes, extremely stony	Mountain Slopes	B	Well drained	None	None
LhE	Layland-Laidig complex, 15 to 35 percent slopes, rubbly	Mountain Slopes	B	Well drained	None	None

**APPENDIX D**  
**SOIL REPORT**





United States  
Department of  
Agriculture

NRCS

Natural  
Resources  
Conservation  
Service

A product of the National  
Cooperative Soil Survey,  
a joint effort of the United  
States Department of  
Agriculture and other  
Federal agencies, State  
agencies including the  
Agricultural Experiment  
Stations, and local  
participants

# Custom Soil Resource Report for Fayette and Raleigh Counties Area, West Virginia

## Minden Delineation



May 25, 2018



# Preface

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Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist ([http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2\\_053951](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951)).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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## How Soil Surveys Are Made

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Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

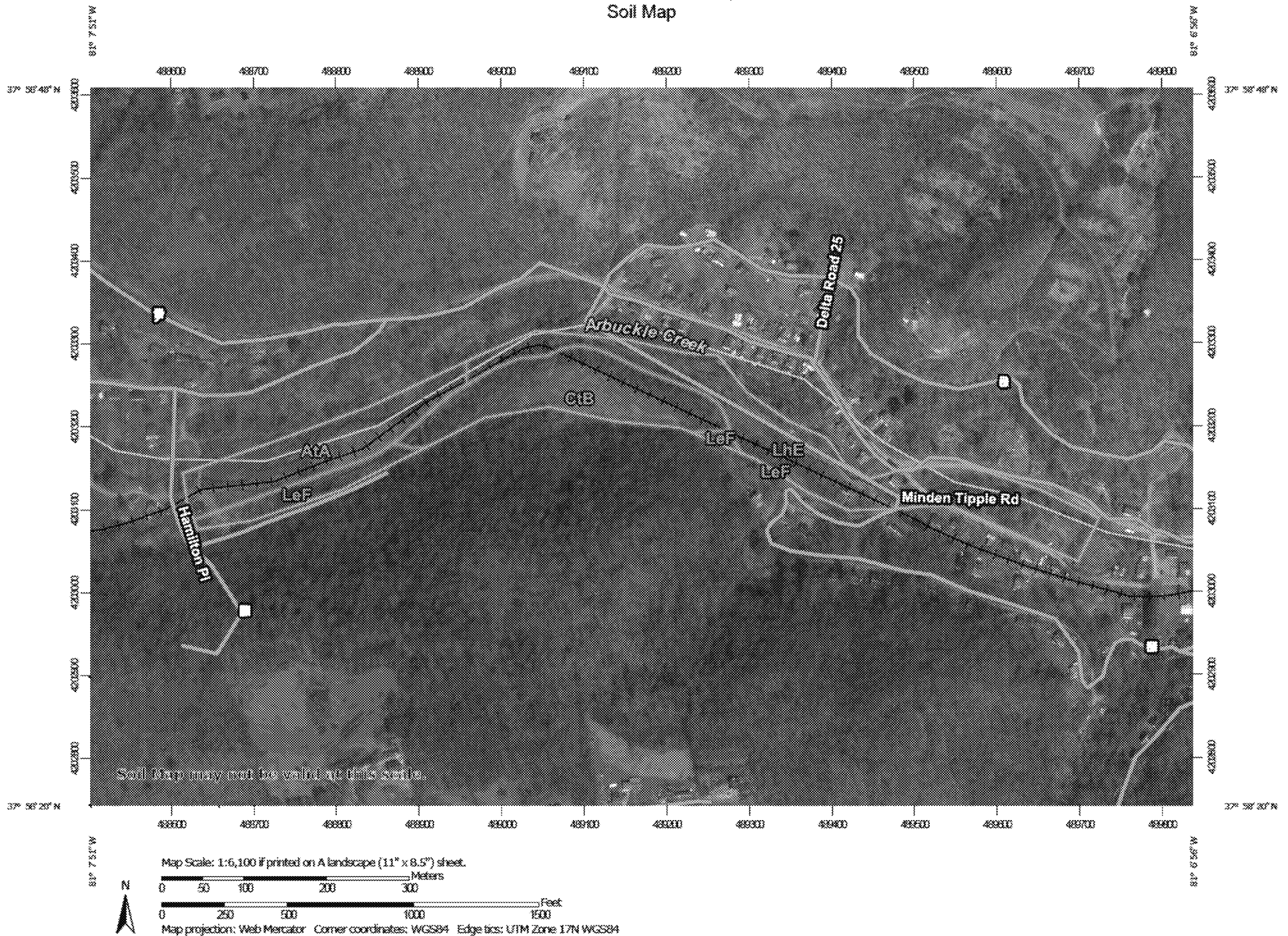



identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.


## Soil Map



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The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.




**MAP LEGEND****Area of Interest (AOI)**
 Area of Interest (AOI)
**Soils**
 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points
**Special Point Features**
 Blowout


 Borrow Pit


 Clay Spot


 Closed Depression


 Gravel Pit


 Gravelly Spot

 Landfill


 Lava Flow

 Marsh or swamp


 Mine or Quarry


 Miscellaneous Water

 Perennial Water

 Rock Outcrop


 Saline Spot


 Sandy Spot


 Severely Eroded Spot


 Sinkhole


 Slide or Slip


 Sodic Spot



 Spoil Area


 Stony Spot


 Very Stony Spot

 Wet Spot



 Other

 Special Line Features
**Water Features**
 Streams and Canals
**Transportation**
 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads
**Background**
 Aerial Photography
**MAP INFORMATION**

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Fayette and Raleigh Counties Area, West Virginia

Survey Area Data: Version 10, Oct 3, 2017

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 9, 2010—Mar 21, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

**MAP LEGEND**

**MAP INFORMATION**

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.



## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AtA	Atkins loam, warm, 0 to 3 percent slopes, frequently flooded	4.7	22.3%
CtB	Cotaco loam, 3 to 8 percent slopes	5.6	26.9%
LeF	Layland-Dekalb-Guyandotte complex, 35 to 70 percent slopes, extremely stony	1.7	8.0%
LhE	Layland-Laidig complex, 15 to 35 percent slopes, rubbly	8.9	42.7%
<b>Totals for Area of Interest</b>		<b>20.9</b>	<b>100.0%</b>

## Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

## Fayette and Raleigh Counties Area, West Virginia

### AtA—Atkins loam, warm, 0 to 3 percent slopes, frequently flooded

#### Map Unit Setting

*National map unit symbol:* 2vxh0  
*Elevation:* 1,580 to 3,260 feet  
*Mean annual precipitation:* 36 to 49 inches  
*Mean annual air temperature:* 49 to 53 degrees F  
*Frost-free period:* 136 to 179 days  
*Farmland classification:* Farmland of local importance

#### Map Unit Composition

*Atkins, warm, and similar soils:* 70 percent  
*Minor components:* 30 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Atkins, Warm

##### Setting

*Landform:* Flood plains  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Concave  
*Parent material:* Acid fine-loamy alluvium derived from interbedded sedimentary rock

##### Typical profile

*Oi - 0 to 1 inches:* slightly decomposed plant material  
*Oe - 1 to 2 inches:* moderately decomposed plant material  
*A - 2 to 5 inches:* loam  
*AB - 5 to 8 inches:* loam  
*Bg - 8 to 26 inches:* loam  
*BCg - 26 to 38 inches:* silty clay loam  
*Cg - 38 to 80 inches:* clay loam

##### Properties and qualities

*Slope:* 0 to 3 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Poorly drained  
*Runoff class:* Negligible  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to high (0.06 to 2.00 in/hr)  
*Depth to water table:* About 0 inches  
*Frequency of flooding:* Frequent  
*Frequency of ponding:* Occasional  
*Available water storage in profile:* Moderate (about 7.7 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 4w  
*Hydrologic Soil Group:* C/D  
*Other vegetative classification:* Wetlands (W3)  
*Hydric soil rating:* Yes

**Minor Components****Knowlton, warm**

*Percent of map unit:* 15 percent  
*Landform:* Terraces  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* Yes

**Philo, warm**

*Percent of map unit:* 10 percent  
*Landform:* Flood plains  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

**Morehead, warm**

*Percent of map unit:* 5 percent  
*Landform:* Terraces  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Other vegetative classification:* Wetlands (W3)  
*Hydric soil rating:* No

**CtB—Cotaco loam, 3 to 8 percent slopes****Map Unit Setting**

*National map unit symbol:* 2nbrp  
*Mean annual precipitation:* 37 to 47 inches  
*Mean annual air temperature:* 50 to 52 degrees F  
*Frost-free period:* 140 to 170 days  
*Farmland classification:* All areas are prime farmland

**Map Unit Composition**

*Cotaco and similar soils:* 75 percent  
*Minor components:* 25 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Cotaco****Setting**

*Landform:* Stream terraces  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Convex

## Custom Soil Resource Report

*Across-slope shape:* Convex

*Parent material:* Acid loamy alluvium derived from sandstone and shale

**Typical profile**

*Ap - 0 to 9 inches:* loam

*BA - 9 to 12 inches:* loam

*Bt1 - 12 to 21 inches:* clay loam

*Bt2-3 - 21 to 37 inches:* loam

*BC - 37 to 48 inches:* clay loam

*Cg - 48 to 65 inches:* clay loam

**Properties and qualities**

*Slope:* 3 to 8 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Moderately well drained

*Runoff class:* Medium

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.57 to 1.98 in/hr)

*Depth to water table:* About 18 to 30 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water storage in profile:* High (about 10.4 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 2e

*Hydrologic Soil Group:* C

*Other vegetative classification:* Acid Loams (AL3)

*Hydric soil rating:* No

**Minor Components****Clifftop**

*Percent of map unit:* 10 percent

*Landform:* Ridges

*Landform position (two-dimensional):* Summit

*Landform position (three-dimensional):* Mountaintop

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Other vegetative classification:* Acid Loams (AL3)

*Hydric soil rating:* No

**Morehead**

*Percent of map unit:* 5 percent

*Landform:* Terraces

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Other vegetative classification:* Wetlands (W3)

*Hydric soil rating:* No

**Monongahela**

*Percent of map unit:* 5 percent

*Landform:* Stream terraces

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Linear



## Custom Soil Resource Report

*Across-slope shape:* Linear  
*Other vegetative classification:* Acid Loams (AL3)  
*Hydric soil rating:* No

**Knowlton**

*Percent of map unit:* 3 percent  
*Landform:* Terraces  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Other vegetative classification:* Wetlands (W3)  
*Hydric soil rating:* Yes

**Laidig**

*Percent of map unit:* 2 percent  
*Landform:* Mountain slopes  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Mountainflank, mountainbase  
*Down-slope shape:* Linear, concave  
*Across-slope shape:* Concave, linear  
*Other vegetative classification:* Acid Loams (AL3)  
*Hydric soil rating:* No

## **LeF—Layland-Dekalb-Guyandotte complex, 35 to 70 percent slopes, extremely stony**

**Map Unit Setting**

*National map unit symbol:* 2qdnw  
*Mean annual precipitation:* 37 to 47 inches  
*Mean annual air temperature:* 50 to 52 degrees F  
*Frost-free period:* 140 to 170 days  
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Layland and similar soils:* 45 percent  
*Dekalb and similar soils:* 30 percent  
*Guyandotte and similar soils:* 15 percent  
*Minor components:* 10 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Layland****Setting**

*Landform:* Mountain slopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Mountainflank  
*Down-slope shape:* Linear  
*Across-slope shape:* Concave  
*Parent material:* Loamy colluvium derived from sandstone and siltstone

## Custom Soil Resource Report

**Typical profile**

*Oi - 0 to 1 inches:* slightly decomposed plant material  
*Oe - 1 to 2 inches:* moderately decomposed plant material  
*A - 2 to 6 inches:* gravelly loam  
*BA - 6 to 9 inches:* gravelly loam  
*Bw - 9 to 46 inches:* very gravelly loam  
*BC - 46 to 57 inches:* very gravelly loam  
*C - 57 to 79 inches:* very gravelly loam

**Properties and qualities**

*Slope:* 35 to 55 percent  
*Percent of area covered with surface fragments:* 9.0 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Well drained  
*Runoff class:* High  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.60 to 2.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* Moderate (about 6.6 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7s  
*Hydrologic Soil Group:* B  
*Other vegetative classification:* Not Suited (NS)  
*Hydric soil rating:* No

**Description of Dekalb****Setting**

*Landform:* Ridges  
*Landform position (two-dimensional):* Summit  
*Landform position (three-dimensional):* Mountaintop  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Acid loamy residuum weathered from sandstone

**Typical profile**

*Oi - 0 to 0 inches:* stony slightly decomposed plant material  
*Oe - 0 to 1 inches:* moderately decomposed plant material  
*A - 1 to 3 inches:* highly organic very channery fine sandy loam  
*BA - 3 to 8 inches:* very channery fine sandy loam  
*Bw - 8 to 26 inches:* very channery loam  
*BC - 26 to 31 inches:* extremely channery loam  
*R - 31 to 35 inches:* bedrock

**Properties and qualities**

*Slope:* 35 to 70 percent  
*Percent of area covered with surface fragments:* 9.0 percent  
*Depth to restrictive feature:* 20 to 40 inches to lithic bedrock  
*Natural drainage class:* Well drained  
*Runoff class:* Medium  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to very high (0.00 to 19.98 in/hr)

## Custom Soil Resource Report

*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* Low (about 3.2 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7s  
*Hydrologic Soil Group:* A  
*Other vegetative classification:* Not Suited (NS)  
*Hydric soil rating:* No

**Description of Guyandotte****Setting**

*Landform:* Mountain slopes  
*Landform position (two-dimensional):* Shoulder  
*Landform position (three-dimensional):* Upper third of mountain flank  
*Down-slope shape:* Linear, convex  
*Across-slope shape:* Concave, convex  
*Parent material:* Loamy-skeletal colluvium derived from interbedded sedimentary rock

**Typical profile**

*Oi - 0 to 1 inches:* slightly decomposed plant material  
*A - 1 to 12 inches:* very gravelly loam  
*AB - 12 to 18 inches:* very gravelly loam  
*Bw - 18 to 55 inches:* very gravelly loam  
*C - 55 to 79 inches:* extremely gravelly loam

**Properties and qualities**

*Slope:* 35 to 55 percent  
*Percent of area covered with surface fragments:* 9.0 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Well drained  
*Runoff class:* Medium  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.57 to 5.95 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* Low (about 5.5 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7s  
*Hydrologic Soil Group:* A  
*Other vegetative classification:* Not Suited (NS)  
*Hydric soil rating:* No

**Minor Components****Cliff top**

*Percent of map unit:* 9 percent  
*Landform:* Ridges  
*Landform position (two-dimensional):* Shoulder  
*Landform position (three-dimensional):* Mountaintop

## Custom Soil Resource Report

*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

**Rock outcrop**

*Percent of map unit:* 1 percent  
*Landform:* Escarpments  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Mountainflank

**LhE—Layland-Laidig complex, 15 to 35 percent slopes, rubbly****Map Unit Setting**

*National map unit symbol:* 2nbss  
*Mean annual precipitation:* 37 to 47 inches  
*Mean annual air temperature:* 50 to 52 degrees F  
*Frost-free period:* 140 to 170 days  
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Layland and similar soils:* 55 percent  
*Laidig and similar soils:* 25 percent  
*Minor components:* 20 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Layland****Setting**

*Landform:* Mountain slopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Mountainflank  
*Down-slope shape:* Linear  
*Across-slope shape:* Concave  
*Parent material:* Loamy colluvium derived from sandstone and siltstone

**Typical profile**

*Oi - 0 to 1 inches:* slightly decomposed plant material  
*Oe - 1 to 2 inches:* moderately decomposed plant material  
*A - 2 to 6 inches:* gravelly loam  
*BA - 6 to 9 inches:* gravelly loam  
*Bw - 9 to 46 inches:* very gravelly loam  
*BC - 46 to 57 inches:* very gravelly loam  
*C - 57 to 79 inches:* very gravelly loam

**Properties and qualities**

*Slope:* 15 to 35 percent  
*Percent of area covered with surface fragments:* 33.0 percent  
*Depth to restrictive feature:* More than 80 inches

## Custom Soil Resource Report

*Natural drainage class:* Well drained  
*Runoff class:* High  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.60 to 2.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* Moderate (about 6.6 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7s  
*Hydrologic Soil Group:* B  
*Other vegetative classification:* Very Rocky, Acid Soils (RA3)  
*Hydric soil rating:* No

**Description of Laidig****Setting**

*Landform:* Mountain slopes  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Mountainflank, mountainbase  
*Down-slope shape:* Linear, concave  
*Across-slope shape:* Concave, linear  
*Parent material:* Loamy colluvium derived from interbedded sedimentary rock

**Typical profile**

*Oi - 0 to 1 inches:* stony slightly decomposed plant material  
*A - 1 to 4 inches:* gravelly highly organic loam  
*A/B - 4 to 7 inches:* gravelly loam  
*Bt1 - 7 to 31 inches:* gravelly loam  
*Bt2 - 31 to 48 inches:* gravelly loam  
*Btx - 48 to 79 inches:* gravelly loam

**Properties and qualities**

*Slope:* 15 to 35 percent  
*Percent of area covered with surface fragments:* 33.0 percent  
*Depth to restrictive feature:* 30 to 50 inches to fragipan  
*Natural drainage class:* Well drained  
*Runoff class:* High  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)  
*Depth to water table:* About 30 to 46 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* Moderate (about 6.8 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7s  
*Hydrologic Soil Group:* C  
*Other vegetative classification:* Very Rocky, Acid Soils (RA3)  
*Hydric soil rating:* No



**Minor Components****Dekalb**

*Percent of map unit:* 10 percent  
*Landform:* Ridges  
*Landform position (two-dimensional):* Summit  
*Landform position (three-dimensional):* Mountaintop  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Other vegetative classification:* Not Suited (NS)  
*Hydric soil rating:* No

**Philo**

*Percent of map unit:* 5 percent  
*Landform:* Flood plains  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Mountainbase, base slope, tread  
*Down-slope shape:* Linear, convex  
*Across-slope shape:* Linear  
*Other vegetative classification:* Acid Loams (AL4)  
*Hydric soil rating:* No

**Rock outcrop**

*Percent of map unit:* 5 percent  
*Landform:* Escarpments  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Mountainflank

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United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_053624](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624)

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**APPENDIX E**  
**WETLAND DATA FORMS**



## WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: C18-214-2276 City/County: Fayette Sampling Date: 5/15/18  
 Applicant/Owner: Weston Solutions State: WV Sampling Point: Wetland 1  
 Investigator(s): [REDACTED] Section, Township, Range: Minden  
 Landform (hillslope, terrace, etc.): low terrace Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR or MLRA): LRRN Lat: -81.117877 Long: 37.975192 Datum: NAD 27  
 Soil Map Unit Name: Layland-Laidig complex NWI classification: Not Mapped  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No (If no, explain in Remarks.)  
 Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No  
 Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No	
Remarks:	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <b>Primary Indicators (minimum of one is required; check all that apply)</b> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input checked="" type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> <input type="checkbox"/> FAC-Neutral Test (D5)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): Water Table Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): Saturation Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No	
Describes Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		



## VEGETATION (Five Strata) – Use scientific names of plants.

Tree Stratum (Plot size: 30 )		Absolute % Cover	Dominant Species?	Indicator Status
1.	Platanus occidentalis	5	Yes	FACW
2.	Salix nigra	5	Yes	OBL
3.	Acer negundo	2.5	Yes	FAC
4.				
5.				
6.				
		12.5	= Total Cover	
50% of total cover: 6.25		20% of total cover: 2.5		
Sapling Stratum (Plot size: )		Absolute % Cover	Dominant Species?	Indicator Status
1.	Platanus occidentalis	5	Yes	FACW
2.	Acer negundo	2.5	Yes	FAC
3.				
4.				
5.				
6.				
		7.5	= Total Cover	
50% of total cover: 3.75		20% of total cover: 1.5		
Shrub Stratum (Plot size: )		Absolute % Cover	Dominant Species?	Indicator Status
1.	Rosa multiflora	10		FAC
2.				
3.				
4.				
5.				
6.				
		10	= Total Cover	
50% of total cover: 5		20% of total cover: 2		
Herb Stratum (Plot size: )		Absolute % Cover	Dominant Species?	Indicator Status
1.	Galium asprellum	5	No	OBL
2.	Poa spp.	10	No	N/L
3.	Typha latifolia	15	Yes	OBL
4.	Juncus effusus	20	Yes	FACW
5.	Acorus americanus	20	Yes	OBL
6.				
7.				
8.				
9.				
10.				
11.				
		70	= Total Cover	
50% of total cover: 35		20% of total cover: 14		
Woody Vine Stratum (Plot size: )		Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
			= Total Cover	
50% of total cover:		20% of total cover:		

Remarks: (Include photo numbers here or on a separate sheet.)

## Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: (A)

Total Number of Dominant Species Across All Strata: (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)

## Prevalence Index worksheet:

Total % Cover of: Multiply by:

OBL species x 1 =

FACW species x 2 =

FAC species x 3 =

FACU species x 4 =

UPL species x 5 =

Column Totals: (A) (B)

Prevalence Index = B/A =

## Hydrophytic Vegetation Indicators:

- 1 - Rapid Test for Hydrophytic Vegetation
- 2 - Dominance Test is >50%
- 3 - Prevalence Index is  $\leq 3.0^1$
- 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

## Definitions of Five Vegetation Strata:

**Tree** – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

**Sapling** – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

**Shrub** – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

**Herb** – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

**Woody vine** – All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes <sup>x</sup> No

[illegible]

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

### Indicators for Problematic Hydric Soils<sup>3</sup>:

- <sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Hydric Soil Present? Yes X No       

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## WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: C18-214-2276 City/County: Fayette Sampling Date: 5/15/18  
 Applicant/Owner: Weston Solutions State: WV Sampling Point: Wetland 4  
 Investigator(s): [REDACTED] Section, Township, Range: Minden  
 Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):  
 Subregion (LRR or MLRA): LRRN Lat: -81.121041 Long: 37.976096 Datum: NAD27  
 Soil Map Unit Name: Layland-Laidig complex NWI classification: Not Mapped  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No (If no, explain in Remarks.)  
 Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No  
 Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/> No
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No		
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No		
Remarks:			

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <b>Primary Indicators (minimum of one is required; check all that apply)</b> <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)	
<b>Field Observations:</b> Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No <input checked="" type="checkbox"/> Depth (inches): Saturation Present? Yes <input checked="" type="checkbox"/> No Depth (inches): (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

## VEGETATION (Five Strata) – Use scientific names of plants.

Tree Stratum (Plot size: 30 )		Absolute % Cover	Dominant Species?	Indicator Status
1.	Platanus occidentalis	15	Yes	FACW
2.	Acer negundo	5	Yes	FACU
3.				
4.				
5.				
6.				
		20	= Total Cover	
50% of total cover: 10		20% of total cover: 4		
Sapling Stratum (Plot size: 15 )		Absolute % Cover	Dominant Species?	Indicator Status
1.	Rosa multiflora	5	No	FAC
2.	Acer negundo	10	Yes	FACU
3.	Rhus typhina	5	No	NL
4.				
5.				
6.				
		20	= Total Cover	
50% of total cover: 10		20% of total cover: 4		
Shrub Stratum (Plot size: )		Absolute % Cover	Dominant Species?	Indicator Status
1.	Rhus typhina	15	Yes	NL
2.	Acer negundo	15	Yes	FACU
3.				
4.				
5.				
6.				
		30	= Total Cover	
50% of total cover: 15		20% of total cover: 6		
Herb Stratum (Plot size: 5 )		Absolute % Cover	Dominant Species?	Indicator Status
1.	Cyperus esculentus	30	Yes	FACW
2.	Poa spp.	10	Yes	—
3.	Gallium asprellum	5	No	OBL
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
		45	= Total Cover	
50% of total cover: 22.5		20% of total cover: 9		
Woody Vine Stratum (Plot size: 30 )		Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
			= Total Cover	
50% of total cover:		20% of total cover:		

Remarks: (Include photo numbers here or on a separate sheet.)

## Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: (A)

Total Number of Dominant Species Across All Strata: (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)

## Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals:	(A) (B)

Prevalence Index = B/A =

## Hydrophytic Vegetation Indicators:

- 1 - Rapid Test for Hydrophytic Vegetation
- 2 - Dominance Test is >50%
- 3 - Prevalence Index is ≤3.0<sup>1</sup>
- 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

## Definitions of Five Vegetation Strata:

**Tree** – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

**Sapling** – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

**Shrub** – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

**Herb** – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

**Woody vine** – All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes X No

[illegible]<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

### Indicators for Problematic Hydric Soils<sup>3</sup>:

- <sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Hydric Soil Present? Yes X No       

Remarks:

## WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: C18-214-2276 City/County: Fayette Sampling Date: 5/16/18  
 Applicant/Owner: Weston Solutions State: WV Sampling Point: Wetland 5  
 Investigator(s): [REDACTED] Section, Township, Range: Minden  
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): <1%  
 Subregion (LRR or MLRA): LRRN Lat: -81.122436 Long: 37.976884 Datum: NAD 27  
 Soil Map Unit Name: Layland-Laidig complex NWI classification: Not Mapped  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: Multiple sewers nearby	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <b>Primary Indicators (minimum of one is required; check all that apply)</b> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Site has been rolled by ATV traffic Smells strongly of sewer		



## VEGETATION (Five Strata) – Use scientific names of plants.

Tree Stratum (Plot size: 30)		Absolute % Cover	Dominant Species?	Indicator Status
1.	Platanus occidentalis	15	Yes	FACW
2.	Robinia pseudoacacia	2		FACU
3.	Cornus racemosa	40	Yes	FAC
4.				
5.				
6.				
		57	= Total Cover	
50% of total cover: 28.5		20% of total cover: 11.4		
Sapling Stratum (Plot size: 15)		Absolute % Cover	Dominant Species?	Indicator Status
1.	Cornus racemosa	30	Yes	FAC
2.	Cornus sericea	15	Yes	NL
3.				
4.				
5.				
6.				
		45	= Total Cover	
50% of total cover: 22.5		20% of total cover: 9		
Shrub Stratum (Plot size: 15)		Absolute % Cover	Dominant Species?	Indicator Status
1.	Acer saccharinum	10	No	FACW
2.	Cornus sericea	30	Yes	NL
3.	Salix nigra	30	Yes	OBL
4.				
5.				
6.				
		70	= Total Cover	
50% of total cover: 35		20% of total cover: 14		
Herb Stratum (Plot size: 5)		Absolute % Cover	Dominant Species?	Indicator Status
1.	Cyperus esculentus	40	Yes	FACW
2.	Agrimonia spp.	10	No	NL
3.	Juncus canadensis	15	Yes	OBL
4.	Lonicera japonica	5	No	FACU
5.				
6.				
7.				
8.				
9.				
10.				
11.				
		70	= Total Cover	
50% of total cover: 35		20% of total cover: 14		
Woody Vine Stratum (Plot size: 30)		Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
			= Total Cover	
50% of total cover: _____		20% of total cover: _____		

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: \_\_\_\_\_ (A)

Total Number of Dominant Species Across All Strata: \_\_\_\_\_ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: \_\_\_\_\_ (A/B)

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = \_\_\_\_\_

**Hydrophytic Vegetation Indicators:**

\_\_\_ 1 - Rapid Test for Hydrophytic Vegetation

\_\_\_ 2 - Dominance Test is >50%

\_\_\_ 3 - Prevalence Index is ≤3.0<sup>1</sup>

\_\_\_ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

\_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Five Vegetation Strata:**

**Tree** – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

**Sapling** – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

**Shrub** – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

**Herb** – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

**Woody vine** – All woody vines, regardless of height.

**Hydrophytic Vegetation Present?** Yes \_\_\_\_\_ No \_\_\_\_\_

Remarks: (Include photo numbers here or on a separate sheet.)

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

### Indicators for Problematic Hydric Soils<sup>3</sup>:

- <sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Hydric Soil Present? Yes X No       

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## WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: C18-214-2276 City/County: Fayette Sampling Date: 5/15/18  
 Applicant/Owner: Weston Solutions State: WV Sampling Point: WL-6  
 Investigator(s): [REDACTED] Section, Township, Range: Minden  
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): <1%  
 Subregion (LRR or MLRA): LRRN Lat: -81.124633 Long: 37.977155 Datum: NAD 27  
 Soil Map Unit Name: Layland-Laidig complex NWI classification: Not Mapped  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☒ Soil ☒ or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ☐ No ☒  
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks: Wetland is located within historic access road, overbank flows do contribute to hydrology	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <b>Primary Indicators (minimum of one is required; check all that apply)</b> <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): 0 Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): 0 Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): 0 (Includes capillary fringe)	<b>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></b>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Overbank flows feed wetland, historic access road		

## VEGETATION (Five Strata) – Use scientific names of plants.

Tree Stratum (Plot size: 30 )	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Platanus occidentalis</i>	25	Y	FACW
2. <i>Salix nigra</i>	30	Y	OBL
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
55 = Total Cover			
50% of total cover: 27.5		20% of total cover: 11	
<b>Sapling Stratum (Plot size: 15 )</b>			
1. <i>Acer negundo</i>	15	Y	FAC
2. <i>Cornus sericea</i>	10	Y	NL
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
25 = Total Cover			
50% of total cover: 12.5		20% of total cover: 5	
<b>Shrub Stratum (Plot size: 15 )</b>			
1. <i>Rosa multiflora</i>	5	N	FACU
2. <i>Salix nigra</i>	15		FACU
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
20 = Total Cover			
50% of total cover: 10		20% of total cover: 4	
<b>Herb Stratum (Plot size: 5 )</b>			
1. <i>Equisetum arvense</i>	20	Y	FAC
2. <i>Dicranthelium clandestinum</i>	15	Y	FAC
3. <i>Acorus americanus</i>	15	Y	OBL
4. <i>Asclepias syriaca</i>	5	N	FACU
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
55 = Total Cover			
50% of total cover: 27.5		20% of total cover: 11	
<b>Woody Vine Stratum (Plot size: 30 )</b>			
1. _____	N/A		
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: _____		20% of total cover: _____	
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b>			

Dominance Test worksheet:	
Number of Dominant Species That Are OBL, FACW, or FAC:	6 (A)
Total Number of Dominant Species Across All Strata:	9 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	66.6% (A/B)
Prevalence Index worksheet:	
Total % Cover of:	Multiply by:
OBL species 45	x 1 = 45
FACW species 25	x 2 = 50
FAC species 50	x 3 = 150
FACU species 10	x 4 = 40
UPL species _____	x 5 = _____
Column Totals: 130 (A)	285 (B)
Prevalence Index = B/A = 2.19	
Hydrophytic Vegetation Indicators:	
<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Definitions of Five Vegetation Strata:	
<b>Tree</b> – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). <b>Sapling</b> – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. <b>Shrub</b> – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. <b>Herb</b> – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height. <b>Woody vine</b> – All woody vines, regardless of height.	
<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____	

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

### Indicators for Problematic Hydric Soils<sup>3</sup>:

- ☐ 2 cm Muck (A10) (MLRA 147)  
☐ Coast Prairie Redox (A16)  
     (MLRA 147, 148)  
☐ Piedmont Floodplain Soils (F19)  
     (MLRA 136, 147)  
☐ Very Shallow Dark Surface (TF12)  
☐ Other (Explain in Remarks)

Hydric Soil Present? Yes X No       

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## WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: C18-214-2276 City/County: Fayette Sampling Date: 5/16/18  
 Applicant/Owner: Weston Solutions State: WV Sampling Point: Wetland 10  
 Investigator(s): [REDACTED] Section, Township, Range: Minden  
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): <1%  
 Subregion (LRR or MLRA): LRRN Lat: -81.122462 Long: 37.976464 Datum: NAD27  
 Soil Map Unit Name: Cotaco loam NWI classification: Not Mapped  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No (If no, explain in Remarks.)  
 Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No  
 Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No	
Remarks: Large Wetland PEM/PFO complex	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input checked="" type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <input checked="" type="checkbox"/> No Depth (inches): 0 Water Table Present? Yes <input checked="" type="checkbox"/> No Depth (inches): 0 Saturation Present? Yes <input checked="" type="checkbox"/> No Depth (inches): 0 (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		



## VEGETATION (Five Strata) – Use scientific names of plants.

Tree Stratum (Plot size: 30 )	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Betula nigra</i>	5	No	FACW
2. <i>Platanus occidentalis</i>	7	Yes	FACW
3. <i>Alnus serrulata</i>	5	No	OBL
4. <i>Cornus amomum</i>	5	No	FACW
5. <i>Salix nigra</i>	7	Yes	OBL
6. _____			
29 = Total Cover			
50% of total cover: 17.5      20% of total cover: 7			
Sapling Stratum (Plot size: 15 )	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Salix nigra</i>	5	Yes	OBL
2. <i>Cornus amomum</i>	10	Yes	FACW
3. _____			
4. _____			
5. _____			
6. _____			
15 = Total Cover			
50% of total cover: 7.5      20% of total cover: 3			
Shrub Stratum (Plot size: 15 )	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Salix nigra</i>	2	Yes	FACW
2. _____			
3. _____			
4. _____			
5. _____			
6. _____			
2 = Total Cover			
50% of total cover: 1      20% of total cover: 0.4			
Herb Stratum (Plot size: 5 )	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Galium asprellum</i>	10	No	OBL
2. <i>Carex lurida</i>	20	Yes	OBL
3. <i>Juncus canadensis</i>	15	Yes	OBL
4. <i>Mentha arvensis</i>	2	No	FACW
5. <i>Phragmites australis</i>	2	No	FACW
6. <i>Equisetum arvense</i>	5	No	FAC
7. _____			
8. _____			
9. _____			
10. _____			
11. _____			
54 = Total Cover			
50% of total cover: 27      20% of total cover: 10.8			
Woody Vine Stratum (Plot size: 30 )	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2. _____			
3. _____			
4. _____			
5. _____			
_____ = Total Cover			
50% of total cover: _____      20% of total cover: _____			

Remarks: (Include photo numbers here or on a separate sheet.)

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: \_\_\_\_\_ (A)

Total Number of Dominant Species Across All Strata: \_\_\_\_\_ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: \_\_\_\_\_ (A/B)

**Prevalence Index worksheet:**

Total % Cover of: \_\_\_\_\_ Multiply by:

OBL species \_\_\_\_\_ x 1 = \_\_\_\_\_

FACW species \_\_\_\_\_ x 2 = \_\_\_\_\_

FAC species \_\_\_\_\_ x 3 = \_\_\_\_\_

FACU species \_\_\_\_\_ x 4 = \_\_\_\_\_

UPL species \_\_\_\_\_ x 5 = \_\_\_\_\_

Column Totals: \_\_\_\_\_ (A) \_\_\_\_\_ (B)

Prevalence Index = B/A = \_\_\_\_\_

**Hydrophytic Vegetation Indicators:**

\_\_\_ 1 - Rapid Test for Hydrophytic Vegetation

\_\_\_ 2 - Dominance Test is >50%

\_\_\_ 3 - Prevalence Index is  $\leq 3.0^1$

\_\_\_ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

\_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Five Vegetation Strata:**

**Tree** – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

**Sapling** – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

**Shrub** – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

**Herb** – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

**Woody vine** – All woody vines, regardless of height.

**Hydrophytic Vegetation Present?** Yes \_\_\_\_\_ No \_\_\_\_\_

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

### Indicators for Problematic Hydric Soils<sup>3</sup>:

- ☐ 2 cm Muck (A10) (MLRA 147)  
☐ Coast Prairie Redox (A16)  
     (MLRA 147, 148)  
☐ Piedmont Floodplain Soils (F19)  
     (MLRA 136, 147)  
☐ Very Shallow Dark Surface (TF12)  
☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

## Restrictive Layer (if observed):

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes ☐ No ☒

Remarks:

### Evidence of red dog soil disturbance

## WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: C18-214-2276 City/County: Fayette Sampling Date: 5/16/18  
 Applicant/Owner: Weston Solutions State: WV Sampling Point: Wetland B  
 Investigator(s): [REDACTED] Section, Township, Range: Minden  
 Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):  
 Subregion (LRR or MLRA): LRRN Lat: -81.118805 Long: 37.975512 Datum: NAD27  
 Soil Map Unit Name: Layland-Laidig complex NWI classification: Not Mapped  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No (If no, explain in Remarks.)  
 Are Vegetation Soil or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No  
 Are Vegetation Soil or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No	
Remarks:	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input checked="" type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Wetland B is over 20 outside top of bank. Streamside edges located only		

## VEGETATION (Five Strata) – Use scientific names of plants.

Tree Stratum (Plot size: 30 )	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Platanus occidentalis</i>	5	No	FACW
2. <i>Salix nigra</i>	35	Yes	OBL
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
40 = Total Cover			
50% of total cover: 15 20% of total cover: 6			
Sapling Stratum (Plot size: 15 )	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Cornus amomum</i>	10	Yes	FACW
2. <i>Salix nigra</i>	5	Yes	OBL
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
15 = Total Cover			
50% of total cover: 7.5 20% of total cover: 3			
Shrub Stratum (Plot size: 15 )	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: _____ 20% of total cover: _____			
Herb Stratum (Plot size: 5 )	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Mentha arvensis</i>	40	Yes	OBL
2. <i>Poa</i> spp.	5	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
45 = Total Cover			
50% of total cover: 22.5 20% of total cover: 9			
Woody Vine Stratum (Plot size: 30 )	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: _____ 20% of total cover: _____			

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: \_\_\_\_\_ (A)

Total Number of Dominant Species Across All Strata: \_\_\_\_\_ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: \_\_\_\_\_ (A/B)

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = \_\_\_\_\_

**Hydrophytic Vegetation Indicators:**

\_\_\_ 1 - Rapid Test for Hydrophytic Vegetation

\_\_\_ 2 - Dominance Test is >50%

\_\_\_ 3 - Prevalence Index is  $\leq 3.0^1$

\_\_\_ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

\_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Five Vegetation Strata:**

**Tree** – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

**Sapling** – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

**Shrub** – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

**Herb** – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

**Woody vine** – All woody vines, regardless of height.

**Hydrophytic Vegetation Present?** Yes ☒ No ☐

Remarks: (Include photo numbers here or on a separate sheet.)

[illegible]<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

### Indicators for Problematic Hydric Soils<sup>3</sup>:

- |  |  |   |
|--|--|---|
| <input type="checkbox"/> Histosol (A1)                                   | <input type="checkbox"/> Dark Surface (S7)                             | <input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)       |
| <input type="checkbox"/> Histic Epipedon (A2)                            | <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)  | <input type="checkbox"/> Coast Prairie Redox (A16)        |
| <input type="checkbox"/> Black Histic (A3)                               | <input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)        | <input type="checkbox"/> (MLRA 147, 148)                  |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                           | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                      | <input type="checkbox"/> Piedmont Floodplain Soils (F19)  |
| <input type="checkbox"/> Stratified Layers (A5)                          | <input type="checkbox"/> Depleted Matrix (F3)                          | <input type="checkbox"/> (MLRA 136, 147)                  |
| <input type="checkbox"/> 2 cm Muck (A10) (LRR N)                         | <input checked="" type="checkbox"/> Redox Dark Surface (F6)            | <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)               | <input type="checkbox"/> Depleted Dark Surface (F7)                    | <input type="checkbox"/> Other (Explain in Remarks)       |
| <input type="checkbox"/> Thick Dark Surface (A12)                        | <input type="checkbox"/> Redox Depressions (F8)                        |   |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) | <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136) |   |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)                        | <input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)          | <sup>3</sup> Indicators of hydrophytic vegetation and     |
| <input type="checkbox"/> Sandy Redox (S5)                                | <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)    | wetland hydrology must be present,                        |
| <input type="checkbox"/> Stripped Matrix (S6)                            | <input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)     | unless disturbed or problematic.                          |

Hydric Soil Present? Yes X No       

Remarks:

## WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: C15-214-2276 City/County: Fayette Sampling Date: 5/15/18  
 Applicant/Owner: Weston Solutions State: WV Sampling Point: Wetland C  
 Investigator(s): [REDACTED] Section, Township, Range: Minden  
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR or MLRA): LRRN Lat: -81.119043 Long: 37.975685 Datum: NAD27  
 Soil Map Unit Name: Leyland-Laidig complex NWI classification: Not Mapped  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No (If no, explain in Remarks.)  
 Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No  
 Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/> No
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No		
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No		
Remarks:			

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <b>Primary Indicators (minimum of one is required; check all that apply)</b> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)	
<b>Field Observations:</b> Surface Water Present? Yes No <input checked="" type="checkbox"/> Depth (inches): Water Table Present? Yes No <input checked="" type="checkbox"/> Depth (inches): Saturation Present? Yes <input checked="" type="checkbox"/> No Depth (inches): (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: Overbank flows and road runoff enter convex wetland			



## VEGETATION (Five Strata) – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u> )		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Salix nigra</u>	<u>2</u>	<u>Yes</u>	<u>OBL</u>
2.				
3.				
4.				
5.				
6.				
		<u>2</u> = Total Cover		
50% of total cover: <u>1</u>		20% of total cover: <u>0.4</u>		
Sapling Stratum (Plot size: <u>15</u> )		Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
50% of total cover: _____		20% of total cover: _____		
Shrub Stratum (Plot size: <u>15</u> )		Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
50% of total cover: _____		20% of total cover: _____		
Herb Stratum (Plot size: <u>5</u> )		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Cyperus esculentus</u>	<u>8</u>	<u>No</u>	<u>FACW</u>
2.	<u>Solidago canadensis</u>	<u>15</u>	<u>No</u>	<u>FACU</u>
3.	<u>Juncus effusus</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>
4.	<u>Typha latifolia</u>	<u>20</u>	<u>Yes</u>	<u>OBL</u>
5.	<u>Mentha arvensis</u>	<u>20</u>	<u>Yes</u>	<u>OBL</u>
6.	<u>Poa spp.</u>	<u>15</u>	<u>No</u>	<u>NL</u>
7.				
8.				
9.				
10.				
11.				
		<u>98</u> = Total Cover		
50% of total cover: <u>45</u>		20% of total cover: <u>18</u>		
Woody Vine Stratum (Plot size: _____ )		Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
50% of total cover: _____		20% of total cover: _____		

Remarks: (Include photo numbers here or on a separate sheet.)

## Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: \_\_\_\_\_ (A)

Total Number of Dominant Species Across All Strata: \_\_\_\_\_ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: \_\_\_\_\_ (A/B)

## Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = \_\_\_\_\_

## Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is  $\leq 3.0^1$
- ☐ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

## Definitions of Five Vegetation Strata:

**Tree** – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

**Sapling** – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

**Shrub** – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

**Herb** – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

**Woody vine** – All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes X No \_\_\_\_\_

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

### Indicators for Problematic Hydric Soils<sup>3</sup>:

- <sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Hydric Soil Present? Yes X No       

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